AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-200. (cancelled)

201. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected with the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
· a second resistor (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected with the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· feedback means (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31), and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected

to the output (31c) of said third operational amplifier (31), and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
further comprising a fourth stage (40) provided with:
– a fourth operational amplifier (41) having an inverting input (41a), a noninverting input (41b) and an output (41c), said inverting input (41a) being connected to the noninverting input (11b, 21b or 31b) of one of said first, second and third operational amplifiers (11, 21, 31), either directly or through a resistor;
– a first resistor (42) having a first end (42a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (42b);
– a second resistor (43) having a first end (43a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (43b) connected to the output (41c) of said fourth operational amplifier (41).

202. (previously presented) A filter as claimed in claim 201, wherein the feedback means (23) of said second stage (20) is defined by a branch comprising a capacitor and a resistor connected to each other in series, this branch being parallel-connected to a capacitor.

203. (previously presented) A filter as claimed in claim 201, wherein the second end (42b) of the first resistor (42) of said fourth stage (40) is connected to the output (11c) of said first operational amplifier (11).

204. (previously presented) A filter as claimed in claim 203, wherein the inverting input (31a) of said third operational amplifier (31) is directly connected to the noninverting input (41b) of said fourth operational amplifier (41), the inverting input (41a) of said fourth operational amplifier (41) being connected to the noninverting input (11b) of said first operational amplifier (11), either directly or through a resistor.

205. (previously presented) A filter as claimed in claim 204, further comprising a feedback resistor (106) having a first end (106a) connected to the output (21c) of said second operational amplifier (21), and a second end (106b) connected to the noninverting input (11b) of said first operational amplifier (11).

206. (previously presented) A filter as claimed in claim 203, wherein the noninverting input (41b) of said fourth operational amplifier (41) is directly connected to the inverting input (21a) of

said second operational amplifier (21), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (11b) of said first operational amplifier (11), a direct connection (203) being between the inverting input (11a) of said first operational amplifier (11) and the noninverting input (31b) of said third operational amplifier (31).

207. (previously presented) A filter as claimed in claim 206, further comprising an auxiliary resistor (61) connected between the inverting input (31a) of said third operational amplifier (31) and a fixed-potential node.

208. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected with the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected with the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a first resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· a second resistor (33) having a first end (33a) connected to the inverting input (31a) of said

third operational amplifier (31), and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31), and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
further comprising a fourth stage (40) provided with:
– a fourth operational amplifier (41) having an inverting input (41a), a noninverting input (41b) and an output (41c), said inverting input (41a) being directly connected either to the noninverting input (11b) of said first operational amplifier (11) or to the noninverting input (31b) of said third operational amplifier (31);
– a first resistor (42) having a first end (42a) connected to the inverting input (41a) of said fourth operational amplifier (41), and a second end (42b) connected to the output (11c) of said first operational amplifier (11);
– a second resistor (43) having a first end (43a) connected to the inverting input (41a) of said fourth operational amplifier (41), and a second end (43b) connected to the output (41c) of said fourth operational amplifier (41).

209. (previously presented) A filter as claimed in claim 208, wherein the inverting input (31a) of said third operational amplifier (31) is directly connected to the noninverting input (41b) of said fourth operational amplifier (41), a direct connection (201) being between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (21b) of said second operational amplifier (21), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (11b) of said first operational amplifier (11).

210. (previously presented) A filter as claimed in claim 209, further comprising a main resistor (60) connected between the inverting input (11a) of said first operational amplifier (11) and a fixed-potential node.

211. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected with the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);

· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected with the output (11c) of said first operational amplifier (11);

– a second stage (20) provided with:

· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);

· a first resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);

· a second resistor (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);

– a third stage (30) provided with:

· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);

· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);

· feedback means (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (33b) connected to the output (31c) of said third operational amplifier (31);

– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31), and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),

further comprising a fourth stage (40) provided with:

– a fourth operational amplifier (41) having an inverting input (41a), a noninverting input (41b) and an output (41c), said inverting input (41a) being directly connected with the noninverting input (11b) of said first operational amplifier (11) or the noninverting input (21b) of said second operational amplifier (21);

– a first resistor (42) having a first end (42a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (42b) connected to the output (21c) of said second operational amplifier (21);

– a second resistor (43) having a first end (43a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (43b) connected to the output (41c) of said

fourth operational amplifier (41).

212. (previously presented) A filter as claimed in claim 211, further comprising a main resistor (60) having a first end (60a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (60b) connected to a fixed-potential node.

213. (previously presented) A filter as claimed in claim 211, further comprising a direct connection (81) between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (11b) of said first operational amplifier (11), the noninverting input (41b) of said fourth operational amplifier (41) being connected to a fixed-potential node, the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (21b) of said second operational amplifier (21).

214. (previously presented) A filter as claimed in claim 211, further comprising a direct connection (82) between the inverting input (11a) of said first operational amplifier (11) and the noninverting input (41b) of said fourth operational amplifier (41), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (21b) of said second operational amplifier (21).

215. (previously presented) A filter as claimed in claim 211, further comprising a direct connection (84) between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (41b) of said fourth operational amplifier (41).

216. (previously presented) A filter as claimed in claim 212, further comprising a direct connection (84) between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (41b) of said fourth operational amplifier (41).

217. (previously presented) A filter as claimed in claim 215, further comprising a direct connection (85) between the inverting input (11a) of said first operational amplifier (11) and the noninverting input (21b) of said second operational amplifier (21), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (11b) of said first operational amplifier (11).

218. (previously presented) A filter as claimed in claim 15, further comprising a direct

connection (87) between the inverting input (21a) of said second operational amplifier (21) and the noninverting input (11b) of said first operational amplifier (11), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (21b) of said second operational amplifier (21).

219. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected to the output (11c) of said first operational amplifier (11);
· a resistor (12) having a first end (12a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
· a resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a first resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· a second resistor (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31) and a second end (50b) connected to

the inverting input (11a) of said first operational amplifier (11),
further comprising a fourth stage (40) provided with:
– a fourth operational amplifier (41) having an inverting input (41a), a noninverting input (41b) and an output (41c);
– a first resistor (42) having a first end (42a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (42b) connected to the output (31c) of said third operational amplifier (31), the inverting input (41a) of said fourth operational amplifier (41) being directly connected with the noninverting input (21b) of said second operational amplifier (21) or with the noninverting input (31b) of said third operational amplifier (31);
– a second resistor (43) having a first end (43a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (43b) connected to the output (41c) of said fourth operational amplifier (41).

220. (previously presented) A filter as claimed in claim 219, further comprising a direct connection (223) between the inverting input (21a) of said second operational amplifier (21) and the noninverting input (41b) of said fourth operational amplifier (41), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (31b) of said third operational amplifier (31).

221. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected with the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected with the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a first resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);

· a second resistor (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· feedback means (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31) and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
characterised in that it further comprises a fourth stage (40) provided with:
– a fourth operational amplifier (41) having an inverting input (41a) directly connected to the noninverting input (21b) of said second operational amplifier (21) or the noninverting input (31b) of said third operational amplifier (31), a noninverting input (41b) and an output (41c);
– a first resistor (42) having a first end (42a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (42b) connected to the output (31c) of said third operational amplifier (31);
– a second resistor (43) having a first end (43a) connected to the inverting input (41a) of said fourth operational amplifier (41) and a second end (43b) connected to the output (41c) of said fourth operational amplifier (41).

222. (previously presented) A filter as claimed in claim 221, further comprising a direct connection (77) between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (11b) of said first operational amplifier (11).

223. (previously presented) A filter as claimed in claim 222, wherein the noninverting input (41b) of said fourth operational amplifier (41) is directly connected to the inverting input (21a) of said second operational amplifier (21), said filter further comprising an auxiliary resistor (61) connected between the inverting input (31a) of said third operational amplifier (31) and a fixed-

potential node, the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (31b) of said third operational amplifier (31).

224. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected to the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a resistor (22) having a first end (22a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· feedback means(33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31) and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
further comprising a first connecting branch having a first end connected to

the inverting input of said first or second operational amplifier, and a second end connected to the noninverting input of at least one of the two operational amplifiers among said operational amplifiers (11, 21, 31) different from the operational amplifier whose inverting input is connected to the first end of the first connecting branch, said first connecting branch being also defined by a respective fourth stage provided with an amplifier and having an input ("in") connected to the first end of said first connecting branch, and an output ("out") connected to the second end of the same branch.

225. (previously presented) A filter as claimed in claim 224, further comprising a second connecting branch having a first end connected to the inverting input of said third operational amplifier and a second end connected to the noninverting input of said first operational amplifier.

226. (previously presented) A filter as claimed in claim 225, wherein said second connecting branch is defined by a direct connection.

227. (previously presented) A filter as claimed in claim 225, wherein said second connecting branch is defined by a respective fifth stage provided with an amplifier and having an input ("in") connected to the first end of said second connecting branch and an output ("out") connected to the second end of the same branch.

228-229. (cancelled)

230. (previously presented) A filter as claimed in claim 212, further comprising a direct connection (81) between the inverting input (31a) of said third operational amplifier (31) and the noninverting input (11b) of said first operational amplifier (11), the noninverting input (41b) of said fourth operational amplifier (41) being connected to a fixed-potential node, the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (21b) of said second operational amplifier (21).

231. (previously presented) A filter as claimed in claim 216, further comprising a direct connection (87) between the inverting input (21a) of said second operational amplifier (21) and the noninverting input (11b) of said first operational amplifier (11), the inverting input (41a) of said fourth operational amplifier (41) being directly connected to the noninverting input (21b) of said second operational amplifier (21).

232. (cancelled)

233. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected with the inverting input (11a) of said first operational amplifier (11) and a second end (12b) set to receive an input signal (Vs);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected with the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a first resistor (22) having a first end (22a) connected with the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21), and a second end (23b) connected with the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31), and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· feedback means (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31), and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50), preferably defined by a resistor (51), and having a first end (50a) connected to the output (31c) of said third operational amplifier (31), and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
further comprising a first resistor connected between the inverting input of said first operational

amplifier and a fixed-potential node,
a direct connection being provided between the noninverting input of said first operational amplifier and the inverting input of said second or third operational amplifier.

234. (Previously presented) A filter as claimed in claim 233 further comprising a second resistor connected between the inverting input of said third operational amplifier and a fixed-potential node.

235. (cancelled)

236. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected to the inverting input (11a) of said first operational amplifier (11), and a second end (12b) set to receive an input signal (Vs);
· a first connecting block (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11), and a second end (13b);
· a first connecting branch (15) having a first end (15a) connected to the second end (13b) of said first connecting block (13), and a second end (15b) connected to the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21) having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a resistor (22) having a first end (22a) connected to the inverting input (21a) of said second operational amplifier (21), and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· a second connecting block (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21), and a second end (23b);
· a second connecting branch (25) having a first end (25a) connected to the second end (23b) of said second connecting block (23), and a second end (25b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and

an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31), and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· a third connecting block (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31), and a second end (33b);
· a third connecting branch (35) having a first end (35a) connected to the second end (33b) of said third connecting block (33), and a second end (35b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51), and having a first end (50a) connected to the output (31c) of said third operational amplifier (31), and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11), a predetermined one of said first, second and third connecting branches (15, 25, 35) comprising a fourth stage (40) provided with:
– a fourth operational amplifier (41) having an inverting input (41a), a noninverting input (41b) and an output (41c), the latter being connected to the first end (15a, 25a, or 35a) of said predetermined connecting branch (15, 25 or 35), the noninverting input (41b) of said fourth operational amplifier (41) being connected to the second end (15b, 25b, or 35b) of said predetermined connecting branch (15, 25 or 35);
– a feedback branch (91) connected between the output (41c) and the inverting input (41a) of said fourth operational amplifier (41),
further comprising a direct connection between the noninverting input (11b) of saif first operational amplifier (11), and the inverting input (21a, 31a) of said second or third operational amplifier (21, 31).

237. (previously presented) A filter as claimed in claim 236, wherein said fourth stage (40) further comprises a resistor (43), connected between the noninverting input (41b) and the output (41c) of said fourth operational amplifier (41), said noninverting input (41b) being connected to the second end (15b, 25b, 35b) of said predetermined connecting branch (15, 25, 35) through a resistor (42), said feedback branch (91) being defined by a short circuit.

238. (previously presented) A filter as claimed in claim 236, wherein said fourth stage (40) further comprises a resistor (43), connected between the inverting input (41a) of said fourth operational amplifier (41) and the second end (15b, 25b, 35b) of said predetermined connecting branch (15, 25, 35), said feedback branch (91) being defined by a resistor (44).

239. (cancelled)

240. (previously presented) An active filter comprising:
– a first stage (10) provided with:
· a first operational amplifier (11) having an inverting input (11a), a noninverting input (11b) and an output (11c);
· a resistor (12) having a first end (12a) connected to the inverting input (11a) of said first operational amplifier (11), and a second end (12b) set to receive an input signal (Vs);
· feedback means (13) having a first end (13a) connected to the inverting input (11a) of said first operational amplifier (11) and a second end (13b) connected to the output (11c) of said first operational amplifier (11);
– a second stage (20) provided with:
· a second operational amplifier (21), having an inverting input (21a), a noninverting input (21b) and an output (21c);
· a resistor (22) having a first end (22a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (22b) connected to the output (11c) of said first operational amplifier (11);
· feedback means (23) having a first end (23a) connected to the inverting input (21a) of said second operational amplifier (21) and a second end (23b) connected to the output (21c) of said second operational amplifier (21);
– a third stage (30) provided with:
· a third operational amplifier (31) having an inverting input (31a), a noninverting input (31b) and an output (31c);
· a resistor (32) having a first end (32a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (32b) connected to the output (21c) of said second operational amplifier (21);
· feedback means (33) having a first end (33a) connected to the inverting input (31a) of said third operational amplifier (31) and a second end (33b) connected to the output (31c) of said third operational amplifier (31);
– a main feedback branch (50) defined by a resistor (51) and having a first end (50a) connected to the output (31c) of said third operational amplifier (31) and a second end (50b) connected to the inverting input (11a) of said first operational amplifier (11),
further comprising a connecting branch having a first end connected to the inverting input (31a)

of said third operational amplifier (31), and a second end connected to the noninverting input of at least one of the two operational amplifiers among said operational amplifiers (11, 21, 31), different from said third operational amplifier (31), said connecting branch being also defined by a respective fourth stage provided with an amplifier, and having an input ("in") connected to the first end of said connecting branch and an output ("out") connected to the second end of the same branch.

241. (previously presented) A filter as claimed in claim 224, further comprising a second connecting branch having a first end connected to the inverting input (31a) of said third operational amplifier (31), and a second end connected to the noninverting input (21b) of said second operational amplifier (21).

242. (previously presented) A filter as claimed in claim 224 wherein the output ("out") of said fourth stage is connected to the second end of the first connecting branch through a respective resistor, the second end of said first connecting branch being also connected to an end of a respective resistor different from said respective resistor of the output ("out") of said fourth stage.